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Eleventh grade male students participated in this study designed to promote career information-seeking and information-processing behavior. Three experimental treatments were administered: (1) structured group stimulus materials, (2) group social modeling, and (3) group social modeling combined with discussion. Three control procedures were employed: (1) insight group counseling; (2) wait control, and (3) no-interest control. Planned stimulus materials were used in four group counseling sessions. Four video presented group social models were used in four sessions. This sequence and content was followed in the modeling-discussion treatment. Group social-modeling and modeling-discussion treatments were found to promote significantly more knowledge of and ability to stimulate career decision-making at one school. Structured stimulus materials and modeling-discussion were found to stimulate significantly more subject performance of actual career decision-making behaviors at a secondary school. (Author/KP)

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Video Group Social Models, Group Stimulus Materials and Client Characteristics in Vocational Counseling: An Experimental Study

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This study experimentally tested a series of structured group stimulus materials and group social models for promoting career information-seeking and information-processing behaviors by high school students. All 11th grade male students from three suburban high schools were invited to participate. 288 students who indicated an interest in counseling were initially contacted and assessed as to their behavior on a variety of dependent variables. Criteria included the frequency and variety of career decision-making behavior, knowledge of specific ways to obtain information, knowledge of how to use information and ability to actually make use of information in simulated career decision situations. Subjects were randomly assigned to treatment and control groups. Three experimental treatments were administered: (1) structured group stimulus materials, (2) group social modeling, and (3) group social modeling combined with discussion. Three control procedures were employed: insight group counseling, wait control and no-interest control. Planned stimulus materials were used in four group counseling sessions with 8 subjects per counseling groups. Four video presented group social models were used in four sessions paralleling the content of the structured stimulus materials. The sequence as well as content of these first two treatments was followed in the modeling-discussion treatment. Group social modeling and modeling-discussion were found to promote significantly more knowledge of and ability to simulate career decision-making at one school. Structured stimulus materials and modeling-discussion were found to stimulate significantly more subject performance of actual career decision-making behaviors at a second school.

Video Group Social Models, Group Stimulus Materials and Client Characteristics in Vocational Counseling: An Experimental Study

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One of the major goals of counseling is to help students learn how to make wise decisions (Gelatt, 1962; Katz, 1963; Krumboltz, 1966). The decision-making process includes considering a number of alternative courses of action, searching for relevant information about the possible outcomes of each alternative and evaluating the information obtained in light of personal value judgments. One of the most critical decisions for an individual concerns choice of an occupation. Individuals too often reach a vocational decision on the basis of inaccurate and irrelevant information obtained from unreliable sources.

Decision theorists (Edwards, 1961; Cronbach & Gleser, 1965) and counseling researchers (Clark, Gelatt & Levine, 1965; Thoresen & Mehrens, 1967) have pointed out that little is known about how to help individuals in using information. The present study developed three treatments to assist students in identifying plans, gathering relevant and reliable information, processing information, and considering tentative choices. In effect the question was asked: What conditions will be most helpful for individuals in acquiring "an effective strategy for analyzing, organizing and synthesizing information in order to make good decisions"? (Clark, Gelatt & Levine, 1965, p. 41).

Research and theory in the area of occupational choice has not been particularly fruitful in producing experimentally testable hypotheses (Holland, 1964; Carkhuff, Alexik & Anderson, 1967). Although correlational designs have dominated research

on vocational behavior, some experimental studies have emerged. Recent investigations (e.g., Krumboltz, Varenhorst & Thoresen, 1967; Stewart & Thoresen, 1968; Thoresen, Krumboltz & Varenhorst, 1967; Thoresen, Hosford & Krumboltz, 1968) have provided encouraging evidence that social modeling and reinforcement procedures can be powerful factors in promoting career exploratory behaviors. An objective of the present study was to develop and assess the relative efficacy of: (1) a video-presented social modeling procedure, (2) a structured stimulus materials technique, and (3) a treatment combining video modeling with structured stimulus materials.

One problem has involved the considerable variability of modeling effectiveness with each subject. Bandura and Walters (1963) have cited the importance of looking at the interaction between modeling treatment and observer characteristics. Indeed, main effects of treatments may have little meaning in the presence of interactions, and variables not represented have no opportunity to demonstrate their interactive effect (Snow, Tiffin & Seibert, 1965). To date only brief attention has been afforded observer characteristics in the counseling research literature (Long, 1968; Thoresen, Hosford & Krumboltz, 1968; Thoresen & Krumboltz, 1968).

Social psychological research (e.g., Brown, 1965; Taguiri & Petrullo, 1958) strongly supports the contention that the way individuals perceive environmental events affects subsequent performance in a variety of task situations. Research done by Witkin and his associates (1962; 1964; 1965; 1967) in studying individuals who are categorized as "global" compared to "articulated" in their cognitive style suggests that perceptual field dependence-independence style may be an important factor in determining the efficacy of observational experiences. An important

question for this study concerned the effect of behavior acquired from observing a modeling experience when students are assessed according to their perceptual field style. A social modeling procedure undoubtedly presents a tremendously complex pattern of visual and auditory stimulus cues. Does the ability (perceptual field-independence) to overcome an embedding context supplied by a visual stimulus enhance the effect of social models? In the present study, a Hidden Figures test (Frederiksen, 1967) was used to assess perceptual field dependence-independence in students.

The theory and research of Eysenck (1960; 1964; 1966; 1967) can be directly related to the question of what types of individuals are most responsive to what kinds of treatments. Based on the earlier work of Pavlov and Hull, Eysenck developed an "excitation-inhibition" postulate. He maintains that a combination of constitutional and environmental factors determine the degree to which an individual learner is responsive to his immediate environment. Individuals labeled as "introverts" have a strong excitation and weak inhibition balance while "extraverts" possess a weak excitation and strong inhibition balance. Eysenck suggests that individuals described as introvert should be provided with counseling procedures involving considerable reflective and imagery related behavior because they acquire new responses readily without the aid of direct sensory stimuli. Extraverts, however, should be counseled in a setting demanding more social group interaction and a variety of sensory activities involving movement and action since they are less sensitive to their immediate environment.

The present study attempted an empirical test of Eysenck's assumptions. Students were classified as introverts and extraverts using the Maudsley Personality Inventory (Eysenck, 1962). The question was asked: Were students classified as introverts more responsive to a social modeling procedure designed to stimulate

career exploration behaviors than students classified as extravert? Similarly, did extraverted students perform more career decision-making behaviors when engaged in working directly with structured stimulus materials than introverted students?

Subjects

This study was replicated in each of three high schools located in communities consisting primarily of suburban, middle-class families. In each school a standardized announcement form regarding an opportunity to take part in a special four week career planning program was distributed to all eleventh grade male students. Eighty students who indicated an interest in counseling were initially contacted and assessed as to their personality type and perceptual orientation. Subjects were stratified by their scores on these two individual difference variables and randomly assigned to three treatment and two control groups, and one reserve group. The group of students who had expressed no interest in the study comprised a separate population from which a "no-interest" control group and a reserve group were drawn. A total of 96 students were assigned to each school. In all 288 students were assigned in all three schools.

Training of Special Counselors

The three special female counselors who participated in this investigation were Master's degree candidates in counseling at Stanford University during the 1967-1968 academic year. None had any previous counseling experience. Each counselor was assigned to one high school as part of her counseling practicum in January, 1968. The experiment was conducted in April and May of 1968.

The training of the three special counselors to administer the various counseling procedures in a small group setting with male subjects began in

January 1968. The principles of operant conditioning and observational learning (Mischel, 1968) as well as the necessary and sufficient conditions for counseling (Truax & Carkhuff, 1967) served as the rationale for this training. Special counselors were trained to respond verbally and nonverbally to certain verbal behaviors emitted by subjects during specific small group sessions. In addition, the special counselor learned to manage verbal interaction in group settings to maximize the elicitation of career planning, information-seeking, and decision making responses. Furthermore the special counselor learned to demonstrate empathic understanding, positive regard, and genuineness for the insight group counseling control treatment.

Treatments

The present investigation included three experimental and three control treatments. The experimental treatments were: (1) structured stimulus materials, (2) group social modeling, and (3) the materials and models combined. The control treatments included: (1) insight group counseling, (3) wait control, and (3) no-interest control.

Group Structured Stimulus Materials

The sixteen subjects who were randomly assigned within each school to the group structured stimulus materials treatment responded to a series of materials over a period of four weeks. These subjects met in two treatment groups of eight subjects each. The structured materials were designed in such a way that subjects were actively involved in listening, talking, writing and enacting behaviors, e.g., role playing. During each session the counselor verbally and nonverbally reinforced relevant participation responses. Each session lasted 35 minutes and was audio tape recorded.

First Session. The counselor introduced herself, and reminded the subjects that they had volunteered for a special program in planning careers. After a brief period designed to get the subjects acquainted with each other, the counselor distributed to each subject a pamphlet entitled: "Planning My Career." The students were told that they would be working with this pamphlet during four weekly group meetings, in order to learn more about making tentative plans and reaching tentative decisions regarding careers. On the first page, each student was asked to write down the title of at least one occupation which he was interested in exploring as a career possibility. There was space on the page for the listing of more than one occupation. The counselor emphasized the importance of being able to consider more than one alternative as an early step in planning a career.

Students then were asked to react to a preference form within the pamphlet which contained a variety of categories describing characteristics of occupations (Durstine and Fitzhugh, 1967). For example, the subjects indicated whether they preferred to work in social situations (member of a work team) or to work independenly, whether they preferred to work in a job where openings are found mainly in a particular region of the country or in a job where openings are available anywhere in the country. In some categories, e.g., education, students were asked to state how much formal education they were planning to achieve.

The counselor explained to the subjects that each response to a category on the preference form provided them with some information about what they were looking for in an occupation. She emphasized that the next step in exploring an occupation was to find out if that occupation would meet some or even all of their expectations. In order to get such information, each student should be able to ask specific and relevant questions of a reliable source of information. A variety

of sources were presented. The counselor then demonstrated how to ask questions relevant to a particular occupational characteristic and phrased in a manner which would increase the likelihood of eliciting answers containing specific information. For example, What are the educational and training requirements for the occupation which I am exploring? How does the income compare with the cost of living in a specific locale? To what degree does the occupation involve an employee in direct relationships with people? A practice session followed in which the counselor verbally and nonverbally reinforced appropriate student questions according to the criteria for "good" questions cited above.

At the end of the first session, the students were asked to come to the next session with five "good" questions they would like to ask about the occupation which they were most interested in exploring at the present time. A summary sheet listing the planning behaviors enacted and discussed in the first session was distributed to each student.

Second Session. The counselor reviewed the criteria for "good" questions: (1) They should be phrased in a manner which maximized the likelihood of obtaining a specific answer; (2) They should be relevant to the expressed preferences of the student regarding characteristics of occupations; and (3) They should be asked of reliable sources. Each subject, in turn, presented several of the questions he had formulated during the intervening week about the occupation which he had chosen to explore. The counselor reinforced student questions which met the stated criteria.

Attention was given to techniques and sources useful in obtaining answers to the questions which the subjects had formulated. Emphasis was placed on the following information-seeking behaviors and illustrative sources of reliable information:

(1) Observing workers on the job or observing occupational films, (2) Reading vocational simulation kits or occupational brochures, (3) Listening to audio tapes which describe jobs or to a vocational panel in a specific school program, (4) Talking to counselors, teachers, or personnel managers, (5) Writing letters to the admissions office at a local junior college or to the local office of the State Department of Employment, (6) Visiting a personnel office or a college campus.

The counselor had been provided with occupational information brochures for the specific occupation that each subject had indicated an interest in exploring. These were distributed among the subjects. The counselor encouraged the students to work with the brochures to practice reading for answers to one or more of their questions. She directed their attention to the Career Information and Evaluation Form in the "Planning My Career" booklet for the purpose of listing their questions and writing down eventual answers.

In the final five minutes of the session, the counselor and one student role-played an employment interview situation. The counselor acted the part of an employment or personnel manager while the student role-played a person who was seeking information about an occupation. The student asked questions which he had formulated earlier in the sessions. The counselor answered these questions using the information the same student had recorded on his Career Information and Evaluation Form during the previous reading session.

The counselor reviewed the information gathering methods rehearsed during the session. Each subject had participated in reading. Seven of the students had observed an interview role-play between the counselor and the eighth subject, and had listened to them ask and answer questions. During the forthcoming week, the counselor encouraged the students to employ each of these methods along with the

sixth method of writing. The subjects were encouraged to practice as many of the methods as they could outside the treatment setting. If it were impossible for them to try one or more of the methods, they were to return the following week with at least a specific plan for carrying out these techniques. A summary listing the information-seeking behaviors enacted and discussed in the second session was distributed to each student.

Third Session. The special counselor reviewed the criteria for "good" questions and the six ways of obtaining answers to such questions. Subjects then reported what methods they had employed during the intervening week to get answers to the questions which they had generated in earlier sessions. The counselor reinforced students for specific instances of information-seeking behaviors. She also encouraged members of the group to evaluate the answers to questions reported by a particular student using this standard: Did the answers contain specific information relevant to concerns the student had expressed on his preference form in the booklet, "Planning My Career"?

The counselor then inquired whether any subject had received conflicting answers to the same question. That is, had the student encountered the problem of estimating the reliability of a source of information? Discussion followed regarding actual situations reported by students as well as hypothetical situations generated by the counselor. Students thus were given an opportunity to practice using a variety of rules for testing the reliability of a source of information. For example, how current was the information? Was the source of information in a position to promote a particular point of view? Did the information apply only to a specific locale, to a certain region, or was it generally applicable nationwide?

To prepare for the final session, each student was asked to evaluate the answers which he had obtained to his own questions. Did the information contained in the answers meet the three-fold criteria: specificity, relevance and source reliability? If some information did not meet these tests, students were encouraged to seek better answers using the methods discussed and practiced during previous group sessions (reading, writing, talking, listening, visiting, observing). A summary sheet listing the information-seeking and information-processing behaviors enacted and discussed in the third session was distributed to each student.

Fourth Session. The objective of this session was to assist the student in formulating a tentative plan of action subject to new developments and new opportunities. The counselor reviewed the planning, information-seeking, and information-processing behaviors covered in the previous three group sessions. She then asked the subjects to complete the final column of the Career Information and Evaluation Form. In this column, students compared each of their answers with the relevant preference about an occupation which they stated on their preference form in the booklet, "Planning My Career." For each specific comparison, the student was asked to state how suitable the occupation being explored was for him, using the categories "good," "fair," "poor," or "I don't know."

Each subject turned to the final section of the booklet, "Planning My Career," which was called the Decision Planning Sheet. The following steps amounted to a summary evaluation of the occupation which each student had chosen to explore. First, subjects were asked to estimate their overall chances for liking the work involved in the occupation, and to estimate their chances for meeting the requirements for being employed in the occupation. Students were then asked to state their plans

for further exploration of their career alternative. They were asked to indicate which of the following statements was the most appropriate for their plans:

1. "After my investigation of this occupation, I've found that I am not really interested in exploring it further."
2. "No decision. I need more facts."
3. "I'm interested. However I need to weigh more fully the following points."
4. "This seems to be the occupation I would choose if I had to decide right now. I am considering taking the following steps to test my decision further."

Finally, the student was asked to list any new career alternatives that he had discovered in the process of exploring this occupation during the four group sessions. A summary sheet listing the information-processing and decision-making behaviors performed and discussed in the fourth session was distributed to each subject.

Group Social Models

The content of the four 15 minute video taped sessions paralleled the content in the four 35 minute group structured stimulus materials sessions. The models consisted of four eleventh grade males from a nearby high school which was not in the same high school district as the experimental schools. Student models were selected who were highly successful academically, athletically and socially in their school setting. In addition, a female model counselor was selected from the group of trainees in the counselor training program at Stanford University. During each video taped session, the model counselor verbally and nonverbally reinforced relevant participation responses on the part of the model students.

Constructing Social Models. Several months before the study began, the investigator went to the three experimental schools and administered a questionnaire to

approximately 90 male students. On the questionnaire the students were asked: "If you were watching a group of students your age present a panel discussion on some topic, what are the characteristics of a student which would make you want to pay particular attention to him?" Three sets of vignettes followed. One set of three vignettes described a boy who was very successful in athletics, a boy who was fairly successful, and a boy who rarely participated in organized athletics. A second set of vignettes described a boy who was very successful academically, a second boy who was moderately successful, and a third boy who had difficulty with his school subjects. A third set of vignettes described a boy who was very successful socially, a second boy who was fairly successful, and a third boy who participated rarely in school social life. Within each set of vignettes, students were asked to select the one boy to whom they would pay the most attention.

On the final page of the questionnaire, students were asked to indicate preferred levels of specific characteristics regarding the three students whom they had previously selected. These characteristics were: manner of wearing clothes, style of clothes, physical build, style of hair, amount of talking, style of talking, and use of gestures. Frequency counts were taken of each category. Then a model profile was drawn up based on the vignettes most frequently chosen and the characteristics which received the most responses.

A drama teacher in a nearby high school was asked to find out if any of his eleventh grade male students would be interested in taking part in a video modeling project. The drama teacher submitted approximately ten names of volunteers. An independent investigator interviewed these boys in their homes to determine how closely they matched the model profile. Eight boys were selected for the trial video sessions.

Two trial sessions were conducted. At the end of this phase the number of model students was reduced to four. The video taping of the actual fifteen minute group social modeling sessions typically required four practice runs before an acceptable version was attained. Scripts were produced to control the content and length of each video modeling session. However, the script material was communicated orally to the models in order to permit maximum spontaneity during the actual taping sessions. After each practice run, the model students and model counselor observed a playback of their perfommance on a television monitor. This playback then was critiqued by the study director and the investigator who had originally interviewed the prospective candidates.

Treatment Sessions. Two groups of eight Ss each within each school observed the series of video taped modeling sessions over a period of four weeks. Each treatment session, consisting exclusively of subjects viewing one of the four video modeling tapes, lasted 15 minutes. The career decision-making behaviors performed by the models paralleled the procedures that the subjects experienced directly in the group structured stimulus materials treatments.

In the first treatment session, subjects observed the video tape in which models discussed their preferences regarding occupations, and asked specific and relevant questions about them. In the second session, students viewed the video tape in which the models demonstrated a number of ways to obtain information about occupations such as talking, listening and observing. In the third session, subjects watched the models evaluate information which they had obtained about occupations. In the final session, students observed the models reaching tentative decisions about their future plans for investigating occupations.

When the subjects in the group social modeling treatment finished observing a particular model tape, they received a summary sheet on which was listed the planning, information-seeking and decision-making behaviors performed and discussed by the models.

Group Social Modeling and Structured Stimulus Materials

The content and sequence of sessions for the two proups of eight Ss each paralleled the first two treatments. These subjects first observed the video models presented in the second treatment. Then the subjects worked with structured stimulus materials equivalent to those used in the first treatment. Hence, this treatment combined observation of career planning, information-seeking and decision-making behaviors with an opportunity to discuss and to perform them. Each session lasted 50 minutes. At the end of each session, summary sheets equivalent to those used in the first two treatments were distributed to the subjects.

Insight Group Counseling

This group permitted evaluation of the nonspecific effects of undergoing treatment and the personal impact of the counselors. Subjects met for four group sessions of 35 minutes each, during which time the counselor encouraged subjects to verbalize their feelings about future plans and career possibilities. Empathic understanding, respect, genuineness, concreteness and self-disclosure served as guidelines to the conduct of these sessions. Counselors, e.g., employed active listening techniques designed to reflect the nonverbal communication of subjects.

Wait-Control (No-treatment controls)

This group provided conditions to evaluate the passage of time, current life

experiences, the expectancy of receiving treatment and repeated testing. These subjects were initially tested. They were told that because of counselor time limitations it would not be possible to provide counseling immediately but that in approximately six weeks they would be counseled. Wait subjects completed all post-treatment and follow-up procedures. Then subjects were subsequently counseled.

No-interest Control (No-treatment controls)

This group permitted evaluation of repeated testing without the expectancy of future treatment. Although these subjects indicated that they were not interested in participating in the career planning project, they completed initial testing along with the other subjects. They also completed all post-treatment and follow-up procedures. These subjects were not seen at any time by treatment counselors.

Criteria

The differential effects of treatment procedures were evaluated by pre- and post-assessment of: (1) subject knowledge of how to obtain and to use relevant and reliable career information, (2) performance in a simulated career decision situation where the subject was required to go through the sequential steps of the decision-making process for a hypothetical person, and (3) frequency and (4) variety of career decision-making behaviors actually performed by subjects outside the treatment setting. The first administration of the criterion instruments occurred one week prior to the beginning of the treatment sessions. The second administration of the knowledge and the simulation tests occurred one week following the final treatment sessions. The frequency and variety of career planning, information-seeking and decision-making behaviors were assessed for the second time four weeks following the final treatment sessions. The differential length of the criterion

periods assumed that subjects required more time to gather career information from sources both within and outside their schools, and to evaluate the information according to their personal preferences and goals.

Independent investigators interviewed experimental and control subjects to assess the amount and variety of career decision-making behaviors performed outside the treatment setting during the criterion period. Subject interview reports of planning, information-seeking and decision-making behaviors were validated by an evaluation team. No evidence of falsification was found in a randomly selected 12 per cent sample of interview forms.

Results

Table I (a,b,c) presents results from the analyses of covariance and variance based on all data in the 1 X 5 design for each of the four criteria. Table II (a,b,c) contains mean values for the five treatment groups. Of the 12 main effects tested, four were statistically significant at the $< .05$ decision level. Planned comparisons of the results produced by various treatment combinations were computed (Elashoff, 1968; Guenther, 1964).

Experimental Treatments versus Control Treatments

Six of the 18 F ratios and 5 of the 6 *t* values obtained when comparing scores made by subjects in the three experimental groups with scores achieved by subjects in the insight and wait control groups were significant at the $< .05$ level. In three other instances of treatment-control combinations, there were definite trends in the direction of treatment effects despite the fact that nonsignificant findings resulted. Tables III-VI present these results. Findings are listed below:

1. Subjects in the group social modeling treatment demonstrated significantly more knowledge of and ability to simulate career decision-making behaviors when compared with insight and wait control subjects at one school.

2. Group social modeling plus participation caused a significantly greater frequency and variety of career decision-making behaviors for subjects than did the insight control treatment at one school. At a second school subjects in the modeling plus participation treatment demonstrated significatnly more knowledge of and ability to simulate career decision-making behaviors when compared with insight and wait control subjects.

3. Group counseling with structured stimulus materials was significantly more effective than the insight control treatment in promoting subjects' actual performance of career decision-making behaviors at one school. At a second school subjects in the structured stimulus materials treatment demonstrated significantly more ability to simulate career decision-making behaviors when compared with wait control subjects.

Regression Analysis of Predictor Variables

The present study investigated whether two variables (1) personality extraversion-introversion, and (2) perceptual field independence-dependence could predict criterion scores of subjects in the group social modeling and structured stimulus materials treatments. Separate regression analyses were computed for each of the four dependent measures to test the null hypothesis that the slopes of the regression lines between predictor variables and the two treatments were parallel. Results showed that the predictor variables accounted for almost none of the variance in residual scores, i.e., that portion of a subject's post-test

score which deviated from what would have been predicted from the pre-test score. Thus, analyses of the predictor variables and the criterion variables produced no data to disconfirm the null hypothesis of parallel regression lines.

Unplanned Contrasts Between Experimental Treatments

Unplanned contrasts between experimental treatments were computed by means of a method suggested by Elashoff (1968). Four of the 12 contrasts reached statistical significance at the $\leq .01$ level. At School 1 subjects in the group social modeling and modeling plus participation treatments demonstrated significantly more knowledge of career decision-making behaviors when compared with subjects in the structured stimulus materials treatment. At School 2, however, group counseling with structured stimulus materials was significantly more effective than the group social modeling treatment in promoting subjects' actual performance of career decision-making behaviors.

Discussion

The results of the present study provided some evidence that behavioral group counseling procedures derived from social behavior principles are effective in altering student behaviors. The findings seem to warrant the following conclusions and implications for further research.

1. Two of the experimental treatments may have promoted different kinds of learning. Although the group social modeling subjects at School 1 did not engage in more self-reported career decision-making activity than did the controls, this does not mean that they failed to learn <u>how</u> to perform behaviors relevant to wise decision-making. Bandura (1965) makes the point that observing social models may be sufficient for the acquisition of a behavior, but reinforcement procedures may

be needed to elicit the actual performance of that behavior. In fact the students at School 1 who only observed models did demonstrate more knowledge of and ability to simulate career decision-making than did controls.

A similar trend was in evidence at School 2. Only subjects in the experimental treatments which included counselor social reinforcement contingent upon verbal demonstration of career decision-making behaviors exceeded the controls in self-reported career decision-making activity outside the treatment setting. In the present study the <u>actual</u> behaviors modeled in the group social modeling and modeling plus participation treatments were students <u>talking</u> about career decision-making activities. Further research is needed to determine whether additional learning experiences beyond simply observing the models' verbal behaviors are required to stimulate subject performance of career decision-making behaviors in natural settings.

2. The history of the subject was an important consideration in the present study. Subjects were assessed on personality and perceptual variables hypothesized to be important in determining what instructional modes are most effective with which types of students. Findings in this investigation showed, however, that so much of the post-test criterion scores could be predicted from the pre-test scores that little remained to be accounted for by the two predictor variables. That is, differential effects were so small within treatments that there were virtually no data with which to detect a relationship between residual and predictor. Future investigations of these and other predictor variables assumed to interact with treatments designed to promote career decision-making must take into account differences among students related to criterion behaviors. Designs should be utilized which permit blocking of subjects on such variables as: (1) college,

non-college orientation, (2) intelligance test scores, and (3) level of vocational maturity.

3. Based on the results of previous studies (Thoresen and Stewart, 1967; Thoresen, Hosford & Krumboltz, 1968; Thoresen & Krumboltz, 1968) student models were selected for the present study who were highly successful academically, athletically and socially in their school setting. Further information used in the selection of the models was obtained from students in the three participating schools regarding: (1) general descriptions of hypothetical individuals whose advice would influence their decisions, and (2) specific characteristics of these individuals. Future investigation is needed to identify further specific characteristics of models that are effective with certain types of students in promoting career decision-making behaviors. For example, would the same group social models be as effective with junior high school male students? Would students planning for college differ from non-college bound students in responsiveness to the group social models and to verbal and nonverbal reinforcers?

4. The video modeling tapes used in the present investigation and the procedures in the structured stimulus materials treatment involved male students and a female counselor discussing and role-playing career decision-making behaviors. The sex variable has been studied in a series of investigations (Krumboltz & Thoresen, 1964; Varenhorst, 1964; Beach, 1967; Thoresen, Hosford & Krumboltz, 1968). In some of these studies, for example, male models and male counselors were found to be significantly more effective in promoting career information-seeking than female counselors and models. Other studies focused on the interaction between the sex of the model and the sex of the group. Future studies should investigate whether it is important for the sex of the counselor, and the sex of the model to

be the same as the sex of a group in the context of student career decision-making.

The present study investigated the following problems: (1) Can experimental counseling treatments be designed to assist adolescents in learning how to specify, acquire and process information relevant to their career goals? (2) Are some counseling procedures more effective with certain types of students? Additional experimental studies in the area of vocational decision-making are needed which use a variety of criteria and which contrast competing treatments administered to different types of subjects. We should prepare treatments, not to suit the average person, but rather to suit groups of students with particular aptitude patterns. The long term goal is to obtain answers to the question: "What treatment by whom is most effective for this individual with that specific problem under which set of circumstances?" (Thoresen, 1966). With such answers, educators and counselors can be much more effective than they are today in arranging conditions under which individual students can best learn how to make good career decisions.

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TABLE Ia

RESULTS OF ANALYSIS OF COVARIANCE AND

VARIANCE FOR FIVE TREATMENT LEVELS:

School 1

Dependent Variable*	Source of Variation	Analysis of Covariance: Sum of Squares	df	Mean Square	F	Level of Significance
Knowledge Test	Treatment	66.66	4	16.66	2.88	$p < .05$
	Within Cells	329.04	57	5.78		
Frequency	Treatment	22.91	4	5.73	0.96	$p < .40$
	Within Cells	341.81	57	6.00		
Variety	Treatment	11.88	4	2.97	0.93	$p < .40$
	Within Cells	181.92	57	3.19		
		Analysis of Variance				
Simulation Test	Treatment	350.61	4	87.65	3.89	$p < .0025$
	Within Cells	1111.61	58	19.16		

*covariates were pre test scores on the four dependent measures

TABLE Ib

RESULTS OF ANALYSIS OF COVARIANCE AND

VARIANCE FOR FIVE TREATMENT LEVELS:

School 2

Dependent Variable*	Source of Variation	Analysis of Covariance: Sum of Squares	df	Mean Square	F	Level of Significance
Knowledge Test	Treatment	33.19	4	8.30	1.05	$p < .35$
	Within Cells	449.25	57	7.88		
Frequency	Treatment	46.51	4	11.63	2.71	$p < .05$
	Within Cells	244.51	57	4.29		
Variety	Treatment	32.74	4	8.18	3.32	$p < .025$
	Within Cells	140.41	57	2.46		
		Analysis of Variance				
Simulation Test	Treatment	204.78	4	51.20	1.40	$p < .25$
	Within Cells	2116.64	58	36.49		

*covariates were pre test scores on the 4 dependent measures

TABLE Ic

RESULTS OF ANALYSIS OF COVARIANCE AND

VARIANCE FOR FIVE TREATMENT LEVELS:

School 3

Dependent Variable*	Source of Variation	Analysis of Covariance				
		Sum of Squares	df	Mean Square	F	Level of Significance
Knowledge Test	Treatment	33.72	4	8.43	1.03	$p < .40$
	Within Cells	456.39	56	8.15		
Frequency	Treatment	3.32	4	0.83	0.18	$p < .95$
	Within Cells	251.03	56	4.48		
Variety	Treatment	6.90	4	1.72	0.70	$p < .60$
	Within Cells	138.92	56	2.48		
		Analysis of Variance				
Simulation Test	Treatment	106.47	4	26.62	0.59	$p < .65$
	Within Cells	2559.27	57	44.90		

*covariates were pre test scores on the 4 dependent measures

TABLE IIa

MEAN VALUE OF FIVE TREATMENT GROUPS AT SCHOOL 1

Treatment Conditions	Dependent Variables											
	Knowledge Test			Frequency			Variety			Simulation Test		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
Structured Stimulus Materials	16	10.75	2.40	16	4.70	2.48	16	3.63	1.80	16	13.81	5.26
Group Social Modeling	16	12.90	2.40	16	5.66	2.44	16	4.16	1.80	16	16.69	4.64
Models and Materials	15	13.04	2.40	15	5.64	2.52	15	4.23	1.82	15	15.53	3.34
Insight Group Counseling	8	10.94	2.43	8	4.23	2.43	8	3.05	1.78	8	11.00	5.29
Wait-Control	8	11.30	2.43	8	4.22	2.49	8	3.19	1.81	8	10.00	1.77

NOTE: Treatment means listed for the knowledge, frequency and variety criteria are post test means adjusted for initial score differences. Means listed for the simulation criterion are observed post test means.

TABLE IIb

MEAN VALUES OF FIVE TREATMENT GROUPS AT SCHOOL 2

Treatment Conditions	Dependent Variables											
	Knowledge Test			Frequency			Variety			Simulation Test		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
Structured Stimulus Materials	15	12.24	2.79	15	5.77	2.10	15	4.58	1.55	15	18.67	5.02
Group Social Modeling	16	11.13	2.84	16	3.73	2.08	16	3.28	1.56	16	16.50	7.22
Models and Materials	16	12.10	2.80	16	4.90	2.08	16	3.82	1.56	16	14.81	4.93
Insight Group Counseling	8	11.12	2.89	8	3.98	2.09	8	2.75	1.58	8	13.00	4.44
Wait-Control	8	10.09	2.80	8	5.82	2.09	8	4.97	1.58	8	16.12	8.27

NOTE: Treatment means listed for the knowledge, frequency and variety criteria are post test means adjusted for initial score differences. Means listed for the simulation criterion are observed post test means.

TABLE IIc

MEAN VALUES OF FIVE TREATMENT GROUPS AT SCHOOL 3

Treatment Conditions	Dependent Variables											
	Knowledge Test			Frequency			Variety			Simulation Test		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
Structured Stimulus Materials	15	11.83	2.86	15	4.33	2.13	15	3.12	1.59	15	15.93	7.96
Group Social Modeling	16	12.05	2.84	16	3.80	2.12	16	2.63	1.60	16	14.88	6.40
Models and Materials	16	11.94	2.88	16	4.11	2.12	16	3.36	1.56	16	15.50	4.29
Insight Group Counseling	7	10.08	2.85	7	3.88	2.14	7	3.04	1.58	7	11.43	5.19
Wait-Control	8	10.38	2.86	8	4.41	2.17	8	3.63	1.58	8	15.12	9.40

NOTE: Treatment means listed for the knowledge, frequency and variety criteria are post test means adjusted for initial score differences. Means listed for the simulation criterion are observed post test means.

TABLE IIc

MEAN VALUES OF FIVE TREATMENT GROUPS AT SCHOOL 3

Treatment Conditions	Dependent Variables											
	Knowledge Test			Frequency			Variety			Simulation Test		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
Structured Stimulus Materials	15	11.83	2.86	15	4.33	2.13	15	3.12	1.59	15	15.93	7.96
Group Social Modeling	16	12.05	2.84	16	3.80	2.12	16	2.63	1.60	16	14.88	6.40
Models and Materials	16	11.94	2.88	16	4.11	2.12	16	3.36	1.56	16	15.50	4.29
Insight Group Counseling	7	10.08	2.85	7	3.88	2.14	7	3.04	1.58	7	11.43	5.19
Wait-Control	8	10.38	2.86	8	4.41	2.17	8	3.63	1.58	8	15.12	9.40

NOTE: Treatment means listed for the knowledge, frequency and variety criteria are post test means adjusted for initial score differences. Means listed for the simulation criterion are observed post test means.

TABLE III

SELECTED COMPARISONS FOR KNOWLEDGE OF CAREER DECISION-MAKING:

SCHOOL 1

Levels of Treatment		Respective Means		Difference	F	Level of Significance
Col. 1	Col. 2	Col. 1	Col. 2			
GSM	IGC	12.90	10.94	1.96	3.46	$p < .025$
GSM	W/C	12.90	11.30	1.60	2.60	$p < .05$
M&M	IGC	13.04	10.94	2.10	3.96	$p < .01$
M&M	W/C	13.04	11.30	1.74	2.64	$p < .05$
SSM	IGC	10.75	10.94	-0.19	*	
SSM	W/C	10.75	11.30	-1.55	*	

GSM - Group Social Models

M&M - Models & Materials

SSM - Structured Stimulus Materials

IGC - Insight Group Counseling

W/C - Wait Control

*control mean exceeded treatment mean

TABLE IV

SELECTED COMPARISONS FOR FREQUENCY OF CAREER DECISION-MAKING:

SCHOOL 2

Levels of Treatment		Respective Means		Difference	F	Level of Significance
Col. 1	Col. 2	Col. 1	Col. 2			
GSM	IGC	3.73	3.98	-0.25	*	
GSM	W/C	3.73	5.82	-2.09	*	
M&M	IGC	4.90	3.98	0.92	1.05	$p < .35$
M&M	W/C	4.90	5.82	-0.92	*	
SSM	IGC	5.77	3.98	1.79	3.84	$p < .01$
SSM	W/C	5.77	5.82	-0.05	*	

GSM - Group Social Models

M&M - Models & Materials

SSM - Structured Stimulus Materials

IGC - Insight Group Counseling

W/C - Wait Control

* control mean exceeded treatment mean

TABLE V

SELECTED COMPARISONS FOR VARIETY OF CAREER DECISION-MAKING:

SCHOOL 2

Levels of Treatment		Respective Means		Difference	F	Level of Significance
Col. 1	Col. 2	Col. 1	Col. 2			
GSM	IGC	3.28	2.75	0.53	0.58	$p < .65$
GSM	W/C	3.28	4.97	-1.69	*	
M&M	IGC	3.82	2.75	1.07	2.39	$p < .07$
M&M	W/C	3.82	4.97	-1.15	*	
SSM	IGC	4.58	2.75	1.83	6.90	$p < .001$
SSM	W/C	4.58	4.97	-0.39	*	

GSM - Group Social Models

M&M - Models & Materials

SSM - Structured Stimulus Materials

IGC - Insight Group Counseling

W/C - Wait Control

* control mean exceeded treatment mean

TABLE VI

SELECTED COMPARISONS FOR SIMULATION OF CAREER DECISION-MAKING:

SCHOOL 1

Levels of Treatment		Respective Means		Difference	t	Level of Significance
Col. 1	Col. 2	Col. 1	Col. 2			
GSM	IGC	16.69	11.00	5.69	2.67	$p < .01$
GSM	W/C	16.69	10.00	6.69	3.84	$p < .0005$
M&M	IGC	15.53	11.00	4.53	2.51	$p < .01$
M&M	W/C	15.53	10.00	5.53	4.31	$p < .0005$
SSM	IGC	13.81	11.00	2.81	1.21	$p < .20$
SSM	W/C	13.81	10.00	3.81	1.95	$p < .05$

GSM - Group Social Models

M&M - Models & Materials

SSM - Structured Stimulus Materials

IGC - Insight Group Counseling

W/C - Wait Control

* control mean exceeded treatment mean